

“I went to a bookstore and asked the saleswoman, ‘Where’s the self-help section?’ She said if she told me, it would defeat the purpose.”

— George Carlin

According to the Wikipedia, my favorite authoritative repository of un-authoritative knowledge, “sustainability” can be defined as follows: “For humans, sustainability is the long-term maintenance of well being, which has environmental, economic, and social dimensions, and encompasses the concept of stewardship, the responsible management of resource use.” Sounds like humanity’s ultimate self-help technology, although I doubt that you’ll find any books about it in the local book store’s “Self-Help” section.

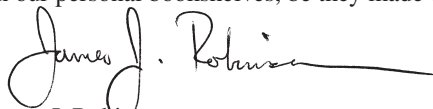
One sustainability self-help book did just debut in the “Science and Engineering” section, however: *Engineering Solutions for Sustainability: Materials and Resources*. It goes straight to the big-picture core of the sustainability topic by presenting a “synopsis of the dynamic, open dialogue on engineering, sustainability, resources, and human needs” that took place during an eponymous workshop held at the École Polytechnique Fédérale de Lausanne, Switzerland, July 22–24, 2009. The workshop was organized by the American Institute of Mining, Metallurgical, and Petroleum Engineers (AIME), of which TMS is a member society and for which TMS managed the publication of the volume through its book publishing partnership with John Wiley and Sons. Through TMS’s relationship with Wiley, the book is now available from the Wiley on-line book store in softcover and Adobe (the e-reader, not building material) formats; it is available from Amazon in softcover and Kindle formats. For the iPad/iPhone gang, the book is available from iTunes, too. Amazingly, the cost of the publication is less than \$40 (and less, still, for TMS members)—an epic bargain for a title published by a small association.

The book presents a compilation of thoughts and insights from the roughly 60 high-level delegates who took part in the workshop—all distinguished science and engineering experts from a variety of disciplines, employer types, and countries. Diversity of educated and knowledgeable perspective on the matter of sustainability is critical as, the report’s executive summary states, “the solutions to any of these problems cannot be found in isolation. The challenges are too broad, complex, and interconnected, with decisions made in one part of the world often having unintended consequences on another. . . . Any action plans developed within one engineering discipline to support its particular priorities without an appreciation of the impact on others would be extremely short-sighted—Interdependencies of energy and transport, transport and housing, or decisions impacting water, food, and health can be ignored only at our peril.” Yep.

The book references a key outcome of the workshop as the development of “a consensus definition of sustainability as it applies to engineering to provide a common basis for deliberation and action among various disciplines.” Specifically, it describes six aspects of a sustainable engineering system:

- Economic: The engineered system is affordable.
- Environmental: The external environment is not degraded by the system.
- Functional: The system meets users’ needs—including functionality, health, and safety—over its life cycle.
- Physical: The system endures the forces associated with its use and accidental, willful, and natural hazards over its intended service life.
- Political: The creation and existence of the system is consistent with public policies.
- Social: The system is and continues to be acceptable to those affected by its existence.

There are many more such insights woven throughout the volume. Methinks that as the engineering community struggles with how to integrate the sustainability concept into the undergraduate curriculum, this book, while not a textbook, would nonetheless be an exceptional supplemental resource for classroom use—especially owing to its student-friendly accessibility, brevity (a one-evening read), and tolerable cost. And, for those of us on a journey of life-long learning, this is certainly a volume worthy of space on our personal bookshelves, be they made of wood or silicon.



James J. Robinson
Publisher

JOM

184 Thorn Hill Road,
Warrendale, PA 15086, USA

Telephone: (724) 776-9000

Fax: (724) 776-3770

Web: www.tms.org/jom.html

E-Mail: jom@tms.org

PUBLISHER

James J. Robinson

NOVEMBER ADVISORS

Aluminum: Shaping and Forming

Aluminum Committee

Geoff Bearne, Rio Tinto Alcan

Multi-scale Modeling of Metal Forming

Shaping & Forming Committee

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Lynne Robinson

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